

## REMARKS

The rejections presented in the Office Action dated December 30, 2003 have been considered. Applicant elects the claims of Group II (9-12). Claims 1-8 and 13-15 are canceled without prejudice. Reconsideration and allowance of the application are respectfully requested.

Applicant acknowledges the drawing objections. Formal drawings will be filed once the application is allowed.

A new Abstract is provided.

The Office Action does not establish that claim 9 is unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,401,083 to Agarwal et al. (hereinafter "Agarwal") in view of U.S. Patent No. 6,108,648 to Lakshmi et al. (hereinafter "Lakshmi"). The rejection is respectfully traversed because the Office Action fails to show that all the limitations are suggested by the references, fails to provide a proper motivation for modifying the teachings of Agarwal with teachings of Lakshmi, and fails to show that the combination could be made with a reasonable likelihood of success.

Claim 9 includes limitations of performing a structure learning task to extract an entire PRM solely from said training database. The PRM is a probabilistic relational model. As defined in the specification, a PRM for attributes includes two components: a qualitative dependency structure and the parameters associated with it. The dependency structure is defined by associating with each attribute a set of parents. It is respectfully submitted that none of the cited references appear to relate to probabilistic relational models.

For example, the cited sections of Agarwal apparently teaches gathering statistics that may then be used to optimize queries (col. 9, ll. 23-39; col. 10, ll. 27-39, 51-65). The cited sections of Lakshmi apparently teach gathering selectivity statistics during operation (col. 3, ll. 20-30) and preserving weight and bias values in a table for subsequent use by an optimizer (col. 7, ll. 24-27). None of these cited sections reference a PRM nor the features of a PRM. Therefore, the Office Action does not show that all the limitations of claim 9 are suggested by the references.

The alleged motivation for modifying Agarwal with teachings of Lakshmi is that "it would have been obvious ... to apply Lakshmi's teaching of providing dynamic training to the

neural network , the user selects the particular database and table having bias values for training the neural network to Agarwal's system in order to allow users to perform operations such as locating, adding, deleting and updating data stored in the table of database.” The alleged motivation is improper because it simply concludes that certain database functions may be performed with the combination. No evidence is cited to indicate that Agarwal's system is incapable of these operations. Furthermore, even if Agarwal's system is capable of the operations, no evidence cited to indicate that Agarwal's way of performing the operations is deficient and could be improved by Lakshmi's system. Therefore, the alleged motivation is conclusory, and therefore, improper.

The rejection of claim 9 over the Agarwal-Lakshmi combination should be withdrawn because the Office Action fails to show all the limitations are suggested by the combination, fails to provide a proper motivation for combining the references, and fails to show that the combination could be made with a reasonable likelihood of success.

Claims 10 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Agarwal in view of Lakshmi and U.S. Patent No. 5,819,247 to Freund et al (hereinafter Freund). The rejection is respectfully traversed because the Office Action fails to show that all the limitations are suggested by the references, fails to provide a proper motivation for modifying the teachings of the Agarwal-Lakshmi combination with teachings of Freund, and fails to show that the combination could be made with a reasonable likelihood of success.

Claims 10 and 11 include limitations of specifying which structures are candidate hypotheses and evaluating different candidate hypotheses relative to input data. The Office Action is mistaken in alleging that these limitations are suggested by Freund. Freund discloses machine learning the hypotheses used in the classifier component of pattern classification devices such as OCRs (Abstract). The claim limitations are for hypotheses learned from input data from a fully specified instance of the schema in the form of a training database. Clearly, the claimed hypotheses are not suggested by OCR hypotheses.

The alleged motivation for combining Freund with the Agarwal-Lakshmi combination is that “it would have been obvious ... to apply Freund's teaching of each strong hypothesis is made up of weak hypothesis to Agrawal's system and Lakshmi's system in order to compute

probability of the candidate training data entry accurately.” The alleged motivation is improper because it simply concludes that the Agrawal-Lakshmi combination could or would use hypotheses. No evidence is cited to indicate that the Agrawal-Lakshmi combination would be amenable to such modification. Furthermore, even if the Agrawal-Lakshmi combination is amenable to the modification, no evidence cited to indicate that the Agrawal-Lakshmi combination’s way of computing the probability of the candidate training data entry is somehow inaccurate and could be improved by Freund’s system. Therefore, the alleged motivation is conclusory, and therefore, improper.

The rejection of claims 10 and 11 over the Agarwal-Lakshmi-Freund combination should be withdrawn because the Office Action fails to show all the limitations are suggested by the combination, fails to provide a proper motivation for combining the references, and fails to show that the combination could be made with a reasonable likelihood of success (OCR classifier hypotheses would seem to be incompatible with Agarwal’s and Lakshmi’s systems).

Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Agarwal in view of Lakshmi and Freund and U.S. Patent No. 6,055,523 to Hillis. The rejection is respectfully traversed because the Office Action fails to show that all the limitations are suggested by the references, fails to provide a proper motivation for modifying the teachings of the Agarwal-Lakshmi-Freund combination with teachings of Hillis, and fails to show that the combination could be made with a reasonable likelihood of success.

Claim 12 includes limitations of searching hypothesis space for a structure having a high score. The Office Action is mistaken in alleging that these limitations are taught by Hillis. Specifically, Hillis’ system deals with finding a good hypotheses by Genetic Algorithm that is searching through sensor reports for multi-target tracking (col. 4, ll. 34-50; Abstract). Nothing in Hillis appears to suggest scoring hypotheses for constructing a PRM.

The alleged motivation for combining Hillis with the Agarwal-Lakshmi-Freund combination is conclusory, and therefore improper. The Office Action fails to provide any evidence that the Agarwal-Lakshmi-Freund combination needs or could be improved by Hillis’ evaluation of hypotheses. Given that Office Action relies on 4 references in rejecting claim 12, it appears that the rejection is a hindsight reconstruction of the claim limitations. Furthermore, it is

doubtful that Hillis' genetic algorithm could be successfully used to modify the Agarwal-Lakshmi-Freund combination.

The rejection of claim 12 over the Agarwal-Lakshmi-Freund-Hillis combination should be withdrawn because the Office Action fails to show all the limitations are suggested by the combination, fails to provide a proper motivation for combining the references, and fails to show that the combination could be made with a reasonable likelihood of success.

An extension of time is required for consideration of this response, please consider this a petition for a sufficient number of months for consideration of this response. If there are any additional fees in connection with this response, please charge Deposit Account No. 50-0996 (STFD.056PA).

Respectfully submitted,

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